

## **APPLIED PETROGRAPHY GROUP, THIRTEENTH MEETING**

**22 September 2010**

**Afternoon Presentation by Dr. A Bromley**

**Summary**

### **Computer Image Analysis as an Aid to the Petrographer**

The image capture and quantitative analysis of concrete, mortar and stone as cut and ground surfaces and as petrographic thin-sections is greatly facilitated using modern computer methods of image acquisition and processing. These processes can be divided into five stages; methods of image acquisition, image enhancement, image processing, image segmentation and quantitative assessment. The images can be captured either from flat surfaces or from petrographic thin-sections. A scanner can be used to provide adequate detail from surfaces for the modal analysis of concrete, mortar and related materials, including particle type, shape, gradings and sizes. Thin-sections particularly under UV illumination can provide information on water/cement ratios and give forensic information on features such as weathering, crack development and stone discolouration.

The various processes involved in an analysis of this kind include colour contrast enhancement and manipulation, segmentation of the image by setting threshold limits and the quantitative assessment of the identified segments. A number of examples of these methods applied to case study materials will be used to illustrate their practical application and value in evaluating real materials

*A. B. Poole (APG Secretary)*